

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all previous versions and listings of claims in the present application.

1. (Currently Amended) A packet distribution control method in a multicast communication of one-to-many or many-to-many communication, said packet distribution control method comprising:

a step in which a checking, by an end node, as a sender end node that is capable of using both IP multicast and IP unicast and that joins the multicast communication, checks whether or not an end node as a receiver end node of a next packet distribution destination is capable of communicating in IP multicast; and

a step in which switching, by the sender end node, switches packet distribution to the receiver end node between IP multicast and IP unicast according to a the check result of the checking [.] ; and

calculating a multicast distribution tree, in which a sender end node, among end nodes joining multicast communication obtains a multicast distribution tree with the sender end node as a root,

wherein in the calculating, the sender end node registers end nodes targeted for the multicast distribution tree in a registration list, eliminates an internal end node with which the sender end node is capable of communicating in IP multicast from the registration list, specifies an end node that is a branch based on a distribution tree calculation algorithm from the registration list with the sender end node as a starting point, eliminates the branch end node and an internal end node of the branch end node from the registration list, adds the branch end node

to the starting point, repeats the same processing on ahead portions from the branch end node, and thereby obtains the multicast distribution tree.

2. (Currently Amended) The packet distribution control method according to claim 1, further comprising:

a step of setting a forwarding rule in which an end mode joining multicast communication sets a forwarding rule for each end node joining multicast communication based on [[a]] the multicast distribution tree, describing an IP multicast address attribute in the forwarding rule when a next packet distribution destination is capable of communicating in IP multicast or describing an IP address attribute of an end node of the next packet distribution destination in the forwarding rule when the next packet distribution destination is not capable of communicating in IP multicast,

wherein the sender end node checks an address attribute described in the forwarding rule and switches between IP multicast and IP unicast.

3. (Currently Amended) The packet distribution control method according to claim 2,

wherein when an other end node capable of communicating communication in IP multicast is present among end nodes that are roots or branches of the multicast distribution tree, performing packet distribution is performed on the other end node capable of communication using an IP multicast packet with the IP multicast address as a destination address, while when an other end node not capable incapable of communicating communication in IP multicast is present among end nodes that are roots or branches of the multicast distribution tree, performing packet distribution is performed on the other end node incapable of communicating using an IP

unicast packet with the IP address of the ~~ether~~ end node incapable of communication as a destination address.

4. (Currently Amended) The packet distribution control method according to claim 1, further comprising:

~~a step in which transmitting, by an end node joining multicast communication, transmits a response request message in IP multicast to other end nodes than its own end node, with respect to which it is unclear whether or not IP multicast communication is possible, and judges determining an end node returning a response message in response to the response request message as an end node capable of communicating communication in IP multicast.~~

5. (Cancelled)

6. (Currently Amended) The packet distribution control method according to claim [[5]]1, wherein a forwarding request message is transmitted in IP unicast to each branch end node of the calculated multicast distribution tree based upon the calculating ~~calculated-based-on the multicast-distribution-tree-calculating-step~~, the forwarding request message describing a forwarding rule that is determined for each branch, the forwarding rule describing an IP address to forward a packet when receiving the packet for multicast communication with an end node that is a root of the multicast distribution tree as a source, and the branch end node receiving the forwarding request message holds considers the forwarding rule in the forwarding request message as a forwarding rule of the branch end node.

7. (Currently Amended) The packet distribution control method according to claim 6, wherein, when in the case of detecting an end node leaving multicast communication[[],] is detected, the multicast distribution tree is reconstructed according to a state after the end node leaves.

8. (Currently Amended) The packet distribution control method according to claim 1, wherein information [[of]] regarding end nodes and information of join and leave regarding joining and leaving of the end nodes are exchanged between a management server that manages end nodes joining multicast communication and the end nodes, and the management server manages the end nodes.

9. (Currently Amended) A communication terminal which joins a multicast communication that is a one-to-many or is a many-to-many communication, the communication terminal comprising:

an IP multicast section multicaster that uses an IP multicast address in packet distribution;

an IP unicast section unicaster that uses an IP address in packet distribution; and

a switching section switcher that switches between IP multicast and IP unicast according to a receiver end node.

Wherein, when joining a multicast communication as a sender end node, the communication terminal checks whether or not an end node, as a receiver end node, of a next packet distribution destination is capable of communicating in IP multicast, switches packet distribution to the receiver end node between IP multicast and IP unicast according to a result of

the check, and obtains a multicast distribution tree with the sender end node as a root by registering end nodes targeted for the multicast distribution tree in a registration list, eliminates an internal end mode with which the sender end node is capable of communicating in IP multicast from the registration list, specifies an end node that is a branch based on a distribution tree calculation algorithm from the registration list with the sender end node as a starting point, eliminates the branch end node and an internal end node of the branch end node from the registration list, adds the branch end node to the starting point, and repeats the same processing on ahead portions from the branch end node.

10. (Currently Amended) The communication terminal according to claim 9, wherein the communication terminal exchanges information of regarding other end nodes and information of join and leave regarding joining and leaving of the other end nodes with a management server that manages end nodes joining the multicast communication.

11. (Original) The communication terminal according to claim 9, wherein the communication terminal calculates a multicast distribution tree where IP multicast and IP unicast are both present to use both IP multicast and IP unicast for packet distribution.